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TRANSMITTAL FORM (to be used for all correspondence after initial filing)	Application Number	09/866,593	
	Filing Date	May 30, 2001	
	First Named Inventor	Ryan, John, J., III	
	Art Unit	3632	
	Examiner Name	Morrison, Naschica Sanders	
Total Number of Pages in This Submission	127	Attorney Docket Number	RYJJ-1

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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant: Ryan, John, J., III)
Serial No.: 09/866,593)
Filed: May 30, 2001) Group Art Unit: 3632
Title: INSULATING WIRE) Examiner: Morrison, Naschica Sanders
SEPARATOR APPARATUS FOR)
PIPING SYSTEMS)
Docket No.: RYJJ-1)

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BRIEF ON APPEAL

MAIL STOP APPEAL BRIEF - PATENTS
COMMISSIONER FOR PATENTS
P.O. Box 1450
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Sir:

This is an appeal from the Office Action dated July 1, 2004, finally rejecting Claims 2, 3, 5-9, 11-16, 19, 20, and 24-27.

In an Amendment dated September 30, 2004, in response to the Office Action dated July 1, 2004, Claims 7, 8, 11, 14, 15, 19, and 24 were amended and Claims 18, 28 and 29 were cancelled. Claim 27 was cancelled in error as Claim 11 is dependent on Claim 27. All of the

amendments made to the specification and to the claims in response to the Office Action dated July 1, 2004 have been entered for the purposes of appeal. Applicant hereby reinstates Claim 27 as it existed prior to cancellation. The Examiner further has advised in the Advisory Action dated October 26, 2004, that the drawing objections, and the rejection of Claims 2, 3, 5-9, 11-16, 19, 20 and 24-26 under 35 U.S.C. § 112, first paragraph, have been overcome and these objections and rejections have been withdrawn.

Claims 2, 3, 5-9, 11-16, 19, 20 and 24-27 remain rejected as follows: Claims 2, 6, 24, 26 and 27 are rejected under 35 U.S.C. § 102(b) as being anticipated by U.S. Patent No. 5,601,260 issued to Shinohara et al; Claims 3, 5, 7, 8, 11, 19, and 20 are rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 5,601,260 issued to Shinohara et al; Claims 8 and 9 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Shinohara et al in view of U.S. Patent No. 5,772,166 issued to Adams; Claims 12-15 and 25 are rejected under 35 U.S.C. § 103(a) as being unpatentable over the Shinohara et al reference in view of U.S. Patent No. 5,018,260 issued to Ziu; Claim 16 is rejected under 35 U.S.C. § 103(a) as being unpatentable over the Shinohara et al reference in view of the patent issued to Ziu and further in view of U.S. Patent No. 5,772,166 issued to Adams. These rejections were made final.

A Notice of Appeal was filed on December 29, 2004. Applicant hereby files Applicant's Brief on Appeal.

I. Real Party in Interest

The real party in interest is John J. Ryan, III, an individual residing at 95 Jewelberry Drive, Webster, New York 14580.

II. Related Appeals and Interferences

There are no related appeals or interferences known to Appellant or Appellant's attorneys which will directly affect or be directly affected by or having a bearing on Board's decision in this pending appeal.

III. Status of the Claims

This is an appeal from the Office Action of the Examiner dated July 1, 2004, finally rejecting all of the claims pending in the application, Claims 2, 3, 5-9, 11-16, 19, 20 and 24-27.

The claims on appeal are as follows:

2. The insulating wire separator apparatus of Claim 24, wherein the insulating wire separator apparatus is made of a resilient, nonconductive, noncorrosive, nonbiodegradable material.
3. The insulating wire separator apparatus of Claim 24, wherein a separator post extends at right angles from said arm portion, said separator post spaced at least ten inches from said plate portion; and said arm portion extends at least two inches beyond said separator post, to provide safe spacing for additional underground utilities in a common trench location.
5. The insulating wire separator apparatus of Claim 24, wherein said body is color coded, with a separate color used for each utility.

6. The insulating wire separator apparatus of Claim 24, wherein the tracer wire clip portion is located at said other of said opposite ends.
7. The insulating wire separator apparatus of Claim 24, wherein the opening in the resilient, main conduit receiving portion is from sixty to eighty degrees from the centerline of the main conduit.
8. The insulating wire separator apparatus of Claim 24, wherein the tracer wire clip finger portion is angled from three to thirty degrees from the centerline of said arm portion to engage varying sizes of tracer wire therein.
9. The insulating wire separator apparatus of Claim 24, wherein the main conduit receiving portion comprises an inner radius having a first half portion, with a second half portion releasably secured to said first half portion by a releasable fastener.
11. The insulating wire separator apparatus of Claim 27, wherein said arm portion extends at least two inches beyond said separator post to provide safe spacing for additional underground utilities in a common trench location.
12. The insulating wire separator apparatus of Claim 25, wherein said body is color-coded with a separate color used for each utility.
13. The insulating wire separator apparatus of Claim 25, wherein the tracer wire clip portion is located at said other of said opposite ends.

14. The insulating wire separator apparatus of Claim 25, wherein the opening provided in the resilient, main conduit receiving portion is from sixty to eighty degrees from the centerline of the main conduit.
15. The insulating wire separator apparatus of Claim 25, wherein the tracer wire clip finger portion is angled from three to thirty degrees from the centerline of said arm portion to engage varying sizes of tracer wire therein.
16. The insulating wire separator apparatus of Claim 25, wherein the main conduit receiving portion comprises an inner radius having a first half radiused portion, with a second half radiused portion releasably secured to said first half radiused portion by a releasable fastener.
19. The insulating wire separator apparatus of Claim 26, wherein the tracer wire clip finger portion is angled from three to thirty degrees from the centerline of said arm portion to engage varying sizes of tracer wire therein.
20. The insulating wire separator apparatus of Claim 26, wherein said body is color-coded, with a separate color used for each utility.
24. An insulating wire separator apparatus for separating a tracer wire a safe electrically insulative distance from a main conduit in a trench prior to back-filling comprising:

a) an elongated body having opposite ends, a resilient, main conduit receiving portion at one of said opposite ends having an inner radius sized to receive said main conduit therein, an opening into said main conduit receiving portion facing away from the remainder of said body and sized to flex about said main conduit, and a pair of conduit engaging sliding wedge surfaces on opposite sides of said opening which engage said main conduit to flex said main conduit receiving portion to expand said opening and position said main conduit within said main conduit receiving portion upon the application of force between said main conduit and said conduit engaging sliding wedge surfaces of said main conduit receiving portion;

b) an arm portion of said body extending away from said main conduit receiving portion on a side opposite said opening, said arm portion extending to the other of said opposite ends, an electrically insulative safe distance beyond said main conduit receiving portion;

c) a plate and earth anchor portion extending generally perpendicularly from said arm portion in proximity to said conduit receiving portion whereby said force may be applied between said conduit engaging sliding wedge surfaces and said main conduit to flex said main conduit receiving portion and expand said opening to position said main

conduit in said main conduit receiving portion and to resist rotation of said wire separator apparatus about said main conduit after back-filling; and

d) a tracer wire clip portion for receiving a tracer wire therein, said tracer wire clip portion being positioned on said arm portion adjacent to said other end to position the tracer wire said safe distance from said main conduit receiving portion and said conduit therein to protect said conduit from being damaged.

25. The insulating wire apparatus of Claim 24 wherein said main conduit receiving portion has an outwardly extending strengthening rib which extends between said conduit engaging sliding wedge surfaces and said arm portion.
26. The insulating wire apparatus of Claim 24 wherein said tracer wire clip portion has a pair of fingers for receiving a tracer wire therebetween.
27. The insulating wire apparatus of Claim 24 further comprising a separator post extending generally perpendicularly from said arm portion in proximity to said tracer wire clip portion.

The final rejection of Claims 2, 3, 5-9, 11-16, 19, 20 and 24-27 is hereby appealed. The claims stand as amended in the Amendment dated September 30, 2004, filed in response to the Office Action dated July 1, 2004.

IV. Status of Amendments

The claims on appeal stand as being amended and entered upon the filing of Appellant's Amendment dated September 30, 2004, filed in response to the Office Action dated July 1, 2004.

V. Summary of the Invention

The present invention relates to an insulating wire separator apparatus for piping systems having an improved construction and structure, to protect buried pipes and cable from being damaged or melted from accidental electrical charges such as caused by lightning strikes.

On June 22, 2001, the National Transportation Safety Board set forth a safety recommendation which addresses the adequacy of standards for minimum separation distances between gas service lines and electrical service lines. The recommendation is derived from the Safety Board's incident investigations including the July 7, 1998 pipeline accident in South Riding, Virginia, and is consistent with the evidence found in the analysis performed by the Safety Board. The South Riding accident, a natural gas explosion and fire, destroyed a newly constructed residence in the South Riding community. A family consisting of a husband and wife and two children were spending their first night in their new home at the time of the explosion. As a result of the accident, the wife was killed, the husband seriously injured and the two children received minor injuries. Five other homes and two vehicles were damaged. As a result of its investigation, the Safety Board concluded that had the gas and electrical service lines involved in this accident been adequately separated, the heat from the arcing electrical conductor

failure probably would not have damaged the gas service line, and the accident would not have occurred. This is only one of several accidents reported.

The insulating wire separator apparatus of the invention maintains recommended separations between buried gas pipes and electrical cables preventing such accidents. The insulating wire separator apparatus of the invention is a multipurpose clip device used to connect a tracer wire to conduits, cables or piping. The charge put on the tracer wire (locating wire) for locating purposes is that about equal to that of an AM radio. This is especially useful in locating buried conduits, cables or piping which are composed of plastic materials. The insulating wire separator spaces the tracer wires away from the buried plastic conduits, cables or piping during the installation or backfilling process to prevent the plastic conduits, cables or piping from being melted or damaged due to accidental electrical charge placed upon the wire by electrical wires in a joint trench installation, or by a lightning strike.

Another purpose of the insulating wire separator apparatus of the invention is to keep uniform placement of the locating "tracer" wire throughout utility systems. By using this insulating wire separator, the wire will always be within a safe distance from the piping and will not significantly move during the backfilling process.

Furthermore, such buried plastic conduits, cables, or piping are difficult to detect, and construction crews may inadvertently strike and damage such buried conduits, cables or piping because conventional detection methods using metal detecting equipment are unable to locate buried plastic conduits, cables, or piping. Such tracer wires are also used, therefore, to permit detection of buried plastic conduits, cables, or piping using conventional detection methods.

The insulating wire separator apparatus of the invention ensures that the locating wire will stay in safe proximity to the plastic conduits, cables, or piping, but not touching, which meets the specified tolerance zone requirements for most states "one call system" for locating underground facilities.

The insulating wire separator apparatus of the invention includes a main conduit receiving portion having an outer strengthening rib. The insulating wire separator includes an arm portion connected to a wire clip portion. Along the arm portion, near the main conduit receiving portion is a plate and earth anchor portion which maintains the insulating wire separator of the invention in the desired position during backfilling and after being buried.

Specifically, the insulating wire separator apparatus of the invention comprises an elongated body having opposite ends, a resilient main conduit receiving portion at one of the opposite ends having an inner radius sized to receive the main conduit therein. An opening into the main conduit receiving portion faces away from the remainder of the body and is sized to flex about the main conduit. A pair of conduit engaging sliding wedge surfaces on opposite sides of the opening engage the main conduit and cause the main conduit receiving portion to flex and the opening to expand such that the main conduit can be positioned within the main conduit receiving portion upon the application of force between the main conduit and the conduit engaging sliding wedge surfaces.

Specifically, the arm portion of the body extends away from the main conduit receiving portion on a side opposite the opening. The arm portion extends to the other side of the opposite ends an electrically insulative safe distance beyond the main conduit receiving portion. A plate

and earth anchor portion extend generally perpendicularly from the arm portion in proximity to the conduit receiving portion whereby force may be applied between the conduit engaging sliding wedge surfaces and the main conduit deflects the main conduit receiving portion and expands the opening to position the main conduit in the main conduit receiving portion and to resist rotation of the wire separator apparatus about the main conduit after backfilling. A tracer wire clip portion for receiving a tracer wire therein is positioned on the arm portion adjacent to the other end of the arm to position the tracer wire a safe distance from the main conduit receiving portion and the conduit therein to protect the conduit from being damaged. In one version, the wire separator apparatus of the invention is made of resilient, nonconductive, noncorrosive and nonbiodegradable material. In other versions, the body is color coded with a separate color used for each utility. In other versions, the tracer wire clip portion has a pair of fingers for receiving a tracer wire therebetween. The insulating wire separator apparatus of the invention can be installed on either side or on top of existing conduits, cables or piping. At least one or the conduits, cables or piping are received in the main conduit receiving portion 120. The insulating wire separator apparatus of the invention is preferably composed of resilient material such as plastic or rubber so that the insulating wire separator can be easily resiliently deformed to receive at least one conduit, cable or piping therein. A tracer wire is received between the opposite fingers of a tracer wire clip portion which is positioned on the arm portion from at least three inches away from the center line from the main conduit, preferably six or more inches. In one version, the tracer wire clip portion is located adjacent the arm end opposite that of the main conduit receiving portion. Alternatively, the tracer wire clip portion is located upon the arm

portion midway between the main conduit receiving portion and a separator post. The separator post is used to keep two adjacent conduits apart from each other. When a separator post is used, the wire clip portion is located midway between the plate or earth anchor portion and the separator post to space the tracer wire between the main conduit and additional underground utilities. This ensures a safe distance between underground utilities and the common tracer wire. The insulating wire separator apparatus of the invention ensures that the distance between the tracer wire and the main conduit or other utility conduits will be maintained during the backfilling process and after burial.

In a specific embodiment, the wire clip is canted from 3 degrees to 30 degrees in relation to the center line of the arm portion. This canting of the wire clip slightly bends the tracer wire passing therethrough. The purpose of this embodiment is to adapt the wire clip portion for use with any one of several sizes of tracer wire and to more tightly stretch the tracer wire between adjacent ones of the insulating wire separator apparatus of the invention strung along the conduit pipe or cable. This tensioning effect will ensure that the tracer wire is not displaced very much during backfilling operations or burial of the pipes and cables in a common trench.

VI. Grounds for Rejection

Claims 2, 6, 24, 26 and 27 are rejected under 35 U.S.C. § 102(b) as being anticipated by U.S. Patent No. 5,601,260 issued to Shinohara et al. Shinohara discloses a wire support (Fig. 2) made of resin comprising: an elongated body (10 generally) having opposite ends, a resilient main conduit receiving portion (41 adjacent 14) at one end of the body having an inner radius sized to receive a conduit and a pair of conduit engaging sliding wedge surfaces (surfaces of 50

and 52 defining the opening/gap therebetween) on opposite sides of an opening (between 50 and 54A); an I-beam portion (extending between 20 and 14) extending away from the main conduit receiving portion (41 adjacent 14) on the side opposite the opening (between 50 and 54A) and extending to the opposite end of the elongated body a distance beyond the main conduit receiving portion; a plate and anchor portion (46 located between 41 and 52) extending generally perpendicularly from the arm portion in proximity to the conduit receiving portion (41 adjacent 14) a wire clip portion (41 adjacent 12) having a pair of fingers 50, 52 and positioned adjacent to the opposite end of the elongated body); and a separator post 30, 40 extending generally perpendicularly from the arm portion and spaced from the plate portion but in proximity to the wire clip portion, the arm portion extending beyond the separator post (30, 40).

Claims 3, 5, 7, 8, 11, 19, and 20 are rejected under 35 U.S.C. § 103 as being unpatentable over Shinohara et al, U.S. Patent No. 5,601,260. Regarding Claims 3 and 11, Shinohara et al teaches the arm portion extending at least 2 inches beyond the separator post (30). While Shinohara et al does not explicitly teach the separator post spaced at least 10 inches from the plate portion, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified the arm portion of the separator post to extend the specified distances since it has been held that a change in the size of a prior art device is a design consideration within the skill of the art.

Regarding Claims 5 and 20, Shinohara et al does not disclose the wire support being color coded. However, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified the wire support to be any of various colors because

one would have been motivated to provide a device that is aesthetically pleasing as is well known in the art.

Regarding Claims 7, 8, and 19, Shinohara et al teaches the wire support as applied to Claims 2, 6, 24, 26 and 27 above, but does not teach the opening (between 50 and 54a) being angled from about 60 to about 80 degrees from the center line of a conduit or the wire clip finger portion (41 adjacent 12) being angled from about 3 to about 30 degrees from the center line of the arm portion 20. However, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified the opening of the main conduit receiving portion to be angled between about 60 and about 80 degrees or the wire portion to be angled between about 33 and 30 degrees since it has been held that where the general conditions of a claim as disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art.

Claims 9 and 18 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Shinohara et al in view of U.S. Patent No. 5,772,166 issued to Adams. With regard to Claims 9 and 18, Shinohara et al teaches the wire support as applied above, but does not teach the main conduit receiving portion comprising first and second half radiused portions. Adams discloses a mounting clip comprising a main conduit receiving portion (Fig. 11) including a first half radiused portion (132) releasably fastened to a second half radiused portion (134) by a releasable fastener (140, 142). It would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified the main conduit receiving portion to include first and second half radiused portions releasably fastened together because one would have been

motivated to provide a means for adjusting the position of the item secured therein as taught by Adams (col. 8, lines 13-20).

Claims 12-15 and 25 are rejected under 35 U.S.C. § 103(a), as being unpatentable over Shinohara et al in view of U.S. Patent No. 5,018,260 issued to Ziu. Regarding Claims 12-15 and 25, Shinohara et al teaches the wire support to Claims 2, 3, 5-8, 11, 24, 26 and 27 as applied above but does not disclose the main conduit receiving portion including a strengthening rib. Ziu discloses a wire clip comprising a main conduit receiving portion 18 including an outwardly extending rib (40) extending thereabout. It would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified the wire support of Shinohara et al by including an outer rib extending between the conduit engaging surfaces and arm portion (the entire length of the conduit receiving portion) because one would have been motivated to provide a stronger gripping support as taught by Ziu (col. 5, lines 56-58).

Claim 16 is rejected under 35 U.S.C. § 103(a) as being unpatentable over Shinohara et al in view of Ziu and further in view of U.S. Patent No. 5,772,166 issued to Adams. With regard to Claim 16, Shinohara et al in view of Ziu discloses the wire support as applied to Claims 12-15 and 25 above, but does not teach the main conduit receiving portion comprising first and second half radiused portions. Adams discloses a mounting clip comprising a main conduit receiving portion (Fig. 11) including a first half radiused portion (132) releasably fastened to a second half radiused portion (134) by a releasable fastener (140, 142). It would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified the main conduit receiving portion to include first and second half radiused portions releasably fastened together

because one would have been motivated to provide a means for adjusting the position of the item secured therein as taught by Adams (col. 8, lines 13-20).

VII. Issues

The issues presented for review before the Board of this appeal are as follows:

A. Whether, at the time of Appellant's invention as recited in the claims, was there any teaching or suggestion in the Shinohara et al reference as mandated by 35 U.S.C. § 102 to anticipate the inventions claimed in Claims 2, 6, 24, 26 and 27 for the reasons cited by the Examiner on page 4 of the Office Action dated July 1, 2004.

B. Whether, at the time of Appellant's invention as recited in the claims, was there any teaching or suggestion in the references cited and applied as mandated by 35 U.S.C. § 103 to render obvious the inventions claimed in Claims 3, 5, 7, 8, 11, 19, and 20 as being unpatentable over the Shinohara et al reference for the reasons cited by the Examiner on pages 5 and 6 of the Office Action dated July 1, 2004.

C. Whether, at the time of Appellant's invention as recited in the claims, was there any teaching or suggestion in the Shinohara et al and Adams references as mandated by 35 U.S.C. § 103(a) to render obvious the inventions claimed in Claims 9 and 18 as being unpatentable for the reasons cited by the Examiner on page 6 of the Office Action dated July 1, 2004.

D. Whether at the time of Appellant's invention as recited in the claims, was there any teaching or suggestion in the patents issued to Shinohara et al and Ziu as mandated by 35 U.S.C. § 103 to render obvious the inventions claimed in Claims 12-15 and 25 as being

unpatentable for the reasons cited by the Examiner on pages 6 and 7 of the Office Action dated July 1, 2004.

E. Whether at the time of Appellant's invention as recited in the claims, was there any teaching or suggestion in the patents issued to Shinohara et al, Ziu and Adams as mandated by 35 U.S.C. § 103 to render obvious the inventions claimed in Claim 16 as being unpatentable for the reasons cited by the Examiner on page 7 of the Office Action dated July 1, 2004.

VIII. Grouping of the Claims

Claim 24 is the only independent claim.

Claims 2, 3, 5-9, and 25-26 are each dependent upon Claim 24, and thus, can be grouped with Claim 24. Claims 2, 3, 5-9, 25, 26, and 27 will fall with Claim 24 if Claim 24 is not patentable over the patent issued to Shinohara et al under 35 U.S.C. § 102 and 103(a) and Claims 2, 3, 5-9, 25, 26, and 27 do not provide structure that is patentable over the Shinohara et al reference. If Claim 24 is patentable, then Claims 2, 3, 5-9, 25, 26, and 27 are patentable.

Claims 12-16 are each dependent upon Claim 25, and thus can be grouped with Claim 25. Claims 12-16 will fall with Claim 25 if Claim 25 is not patentable over the patents issued to Shinohara et al and Ziu under 35 U.S.C. § 103(a) and Claims 12-16 do not provide structure that is patentable over the Shinohara et al and Ziu references. If Claim 25 is patentable, then Claims 12-16 are patentable.

Claims 19 and 20 are each dependent upon Claim 26, and thus can be grouped with Claim 26. Claims 19 and 20 will fall with Claim 26 if Claim 26 is not patentable over the patent issued to Shinohara et al under 35 U.S.C. § 102 and 103(a) and Claims 19 and 20 do not provide

structure that is patentable over the Shinohara et al reference. If Claim 26 is patentable, then Claims 19 and 20 are patentable.

Claim 11 is dependent upon Claim 27 and thus Claim 11 can be grouped with Claim 27. Claim 11 will fall with Claim 27 if Claim 27 is not patentable over the patent issued to Shinohara et al under 35 U.S.C. § 102 and 103(a) and Claim 11 does not provide structure that is patentable over the Shinohara et al reference. If Claim 27 is patentable, then Claim 11 is patentable.

Applicant's rationale as to why Claims 2, 3, 5-9, 25 and 26 each of which depend upon Claim 24 are separately patentable from Claim 24 is found in the argument on pages 18-36.

Applicant's rationale as to why Claims 12-16 each of which depend upon Claim 25 are separately patentable from Claim 25 is found in the argument on pages 35-37.

Applicant's rationale as to why Claims 19 and 20 each of which depend upon Claim 26 are separately patentable from Claim 26 is found in the argument on pages 30-32.

Applicant's rationale as to why Claim 11 which depends from Claim 27 is separately patentable from Claim 27 is found in the argument on pages 27-29.

IX. Argument

Reconsideration of Claims 2, 3, 5-9, 11-16, 18-20 and 24-29 under 35 U.S.C. §112, first paragraph, as containing subject matter which was not described in the specification, is respectfully requested. All of the objected to language has been deleted from the claims.

Reconsideration of Claims 2, 6, 24, 26 and 27, rejected under 35 U.S.C. §102(b) as being anticipated by U.S. Patent No. 5,601,260, issued to Shinohara et al is respectfully requested. The Shinohara et al reference does not teach or suggest Applicant's invention as claimed in Claim 24:

“24. An insulating wire separator apparatus for separating a tracer wire a safe electrically insulative distance from a main conduit in a trench prior to back-filling comprising:

a) an elongated body having opposite ends, a resilient, main conduit receiving portion at one of said opposite ends having an inner radius sized to receive said main conduit therein, an opening into said main conduit receiving portion facing away from the remainder of said body and sized to flex about said main conduit, and a pair of conduit engaging sliding wedge surfaces on opposite sides of said opening which engage said main conduit to flex said main conduit receiving portion to expand said opening and position said main conduit within said main conduit receiving portion upon the application of force between said main conduit and said conduit engaging sliding wedge surfaces of said main conduit receiving portion;

b) an arm portion of said body extending away from said main conduit receiving portion on a side opposite said opening, said arm portion extending to the other of said opposite ends, an electrically insulative safe distance beyond said main conduit receiving portion;

c) a plate and earth anchor portion extending generally perpendicularly from said arm portion in proximity to said conduit receiving portion whereby said force may be applied between said conduit engaging sliding wedge surfaces and said main conduit to flex said main conduit receiving portion and expand said opening to position said main conduit in said main conduit receiving portion and to resist rotation of said wire separator apparatus about said main conduit after back-filling; and

d) a tracer wire clip portion for receiving a tracer wire therein, said tracer wire clip portion being positioned on said arm portion adjacent to said other end to position the tracer wire said safe distance from said main conduit receiving portion and said conduit therein to protect said conduit from being damaged.”

The patent issued to Shinohara et al does not teach or suggest an insulating wire separator apparatus. In contrast, it teaches a flexible retainer, and more specifically, a coil clamp and a cable clamp having a unique anchor portion at its distal end. This unique anchor portion allows for the coil clamp 10 and cable clamp 60 to be mounted to sheet material having various

thicknesses and a hole therein having various dimensions in a manner which allows the coil clamp to be inclined as illustrated in Fig. 4 and described in column 6, lines 30-40. The coil clamp 10 is used to hold degaussing coils 42 about a cathode ray tube 18. The cable clamp 60 is mounted to a mounting plate and an opening/closing door 72 as described in column 7, lines 20-22. Both the coil clamp 10 and the cable clamp 60 utilize the retainer of the invention to secure the coil clamp 10 and the cable clamp 60 to a plate having a hole therein through which the retaining means 30 passes and engages. The retainer 30 of the invention disclosed by Shinohara et al has four aspects:

(1) The retainer has an anchor portion at its distal end with leg bodies which extend from a main body, substantially parallel to each other with a gap between the leg bodies. The anchor portion connects the distal ends of the leg bodies and is tapered. Pawl pieces project from a base end of the anchor portion, which are passed through the mounting hole, in a direction separating each from the other. The distal ends of the pawl pieces elastically abut a back surface of the mounting plate, when a force acting to pull the anchor portion out of the mounting hole acts on the pawl pieces. The pawl pieces are pressed and expanded outwardly at a peripheral edge of the mounting hole so as to plane-contact the back surface of the mounting plate. Urging means project from the outer surface of the leg body's distal ends upon the urging means being elastically in contact with the surface of the mounting plate. Column 1, line 66 through column 2, line 16.

(2) The urging means is formed by elastic plates. The elastic plates diagonally project from the outer surfaces of the base portion of the leg bodies in the direction of separating each

from the other. Intermediate portions of the elastic plates are bent. Distal end portions of the elastic plates extend toward the leg bodies so as to elastically contact the surface of the mounting plate. Column 2, line 57 to column 3, line 19.

(3) The leg bodies are retained within the mounting hole. The base portions of the leg bodies are thin compared to the other areas of the leg bodies. Column 3, lines 20-23.

(4) The anchor portion retains the member to be retained on a mounting plate by engaging the retaining portion within a mounting hole formed in the mounting plate comprising a pair of leg bodies which extends from the end portion of the elongated and substantially plate shaped main body at which the retaining portion is formed in the longitudinal direction of the main body and a pair of leg bodies being substantially parallel so as to oppose each other with a gap between the leg bodies. The anchor portion connects distal ends of the pair of leg bodies which are tapered. Pawl pieces project from the base end of the anchor and pass through the mounting hole in a direction separating from each other distal ends of the pawl pieces elastically abutting the back surface of the mounting plate so that the pawl pieces gradually separate from the main body in a longitudinal proximal end direction of the main body when the force acting to pull the anchor portion out of the mounting hole acts on the pawl pieces. The pawl pieces are pressed and expanded outwardly at the peripheral edge of the mounting hole so as to plane contact the back surface of the mounting plate. Urging means projects from the outer surfaces of the leg bodies with distal ends of the urging means being elastically contacted with the surface of the mounting plate. Column 3, lines 32-36.

Applicant's insulating wire separator includes none of these four aspects of the retainer/anchor disclosed in the Shinohara et al reference. Applicant's insulating wire separator is not mounted in a mounting hole on a plate. The Shinohara et al reference has nothing to do with spacing tracer wires from utility conduits in the ground. Applicant's invention has nothing to do with degaussing coils, cathode ray tubes and the like, and the Shinohara et al reference has nothing to do with utility cables or tracer wires buried in the ground.

Additionally, the Shinohara retainer cannot be used as "an insulating wire separator apparatus for separating a tracer wire a safe electrically insulated distance from a main conduit in a trench prior to backfilling" as the retainer structure of Shinohara cannot be fastened to a main conduit. The Shinohara reference has no main conduit receiving portion "at one of said opposite ends" nor a "tracer wire clip portion for receiving a tracer wire therein * * * adjacent to said other end to position the tracer wire said safe distance from said main conduit receiving portion," (emphasis supplied) no matter how the Examiner interprets the Shinohara reference. As the Examiner stated "recitation of the intended use of the claimed invention must result in a structural difference between the claimed invention and the prior art in order to patentably distinguish the claimed invention from the prior art. If the prior art structure is capable of performing the intended use, then it meets the claim." The Shinohara reference is not such prior art.

In order to anticipate Applicant's claims, Shinohara et al must be read to include all material elements of a claim. *In re Marshall* (CCPA 1978) 577 F.2d 301, 198 USPQ 344, *In re Kalm* (CCPA 1967) 378 F.2d 959, 154 USPQ 10, which must be enabling to one skilled in the

art. The Examiner reads Shinohara et al on Applicant's claims at page 4 of the Office Action dated July 1, 2004, inconsistently, inaccurately, and erroneously. The Examiner states, utilizing the language of Claim 24, "Shinohara discloses a flexible wire support (Fig. 2) made of resin comprising: an elongated body (10 generally) having opposite ends, a resilient main conduit receiving portion (41 adjacent 14) at one end of the body (*wherein Applicant's body is inherently rigid and the two "conduit receiving portions 41" are both spaced from the opposite ends by either the transverse groove portion 14 and a substantial length of the body or the entire anchor portion 30*) having an inner radius sized to receive a conduit and a pair of conduit engaging sliding wedge surfaces (surfaces of 50 and 52 defining the opening/gap therebetween) on opposite sides of an opening (between 50 and 54A) (*overlooking the differences between degaussing coils which are multiple and flexible and utility conduits which are single and relatively rigid*); an I-beam portion (extending between 20 and 14) extending away from the main conduit receiving portion (41 adjacent 14) on the side opposite the opening (between 50 and 54A) and extending to the opposite end of the elongated body a distance beyond the main conduit receiving portion (*the I-beam portion actually extends on opposite sides of the "conduit receiving portion"*); a plate and anchor portion (46 located between 41 and 52) extending generally perpendicularly from the arm portion in proximity to the conduit receiving portion (41 adjacent 14) (*the anchor portion 46 prevents the body from rotating about its own longitudinal axis whereas Applicant's anchor prevents the body from rotating about the conduit axis which is 90 degrees removed from the arms longitudinal axis*) a wire clip portion (41 adjacent 12) having a pair of fingers 50, 52 (*the Examiner's wire clip portion is identical to the Examiner's conduit*

receiving portion whereas Applicant's wire clip portion and conduit receiving portion are vastly different) and positioned adjacent to the opposite end of the elongated body) (the Examiner's wire clip portion and conduit receiving portion are both intermediate the opposite ends of the elongated body 10, whereas Applicant's conduit receiving portion is at one end and the wire clip portion is at the other end of Applicant's wire separator apparatus. Additionally, the Examiner's wire clip portion is not positioned adjacent the opposite end of the elongated body. It is intermediate of the ends as is the Examiner's conduit receiving portion; Applicant makes a difference between the use of the words "at one end of the body" and "adjacent to the opposite end of the elongated body;" the Examiner equates "adjacent to" as being "at" the end); and a separator post 30, 40 extending generally perpendicularly from the arm portion and spaced from the plate portion but in proximity to the wire clip portion, the arm portion extending beyond the separator post (30, 40) (the Examiner, not finding anything corresponding to Applicant's separator post refers to the structure of the retainer 30 by which the Shinohara et al retainer is secured within an opening in the mounting plate). This retainer 30 (the Examiner's separator post) is at one end of the body 12, not midway between and spaced from both ends of Applicant's body.

The Examiner has both (1) misapplied Shinohara et al to Applicant's claims as the Shinohara et al patent discloses a retainer in a technology far different from the technology relating to Applicant's insulating wire separator, and (2) applied that reference to Applicant's claims inappropriately as above demonstrated. The Examiner (1) cannot ignore the differences in the technology between the Shinohara et al retainer and Applicant's insulating wire separator

apparatus, (2) cannot ignore the clear meaning of the claim language by interpreting the words “at said end” to include the clamp plates 41 which are disclosed in Shinohara et al spaced from one end by the groove portions 14 and spaced from the other end by the anchor portion 30, and (3) cannot interpret the words “adjacent said end” to mean midway between the ends, where the Shinohara et al reference clearly discloses the two arc-shaped clamp plates 41 to be positioned.

Lastly, a person skilled in the art of Applicant’s invention would never look to the Shinohara et al reference and a flexible retainer for degaussing coils for any teaching, guidance, or information with regard to utility tracer wire separators as separate turns of degaussing coils require low voltage insulation whereas the insulation between conduits and tracer wires is achieved by the distance maintained between the conduits and the tracer wires and the insulation must be sufficient to withstand lightning strikes.

A claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described in a single reference (citations omitted). The identical invention must be shown in as complete detail as contained in the . . . claim (citations omitted). The elements must be arranged as required by the claim. MPEP § 2131.

Contrary to the Examiner’s statement that all of the elements of Claim 24 are disclosed, taught or suggested in the Shinohara et al reference, the following elements are not disclosed, taught or suggested:

- (a) “an elongated body having opposite ends, a resilient main conduit receiving portion at one of said opposite ends having an inner radius sized to receive said main conduit therein, an opening into said main conduit receiving portion facing away from the remainder of said body and sized to flex about said main conduit,

and a pair of conduit engaging sliding wedge surfaces on opposite sides of said opening which engage said main conduit to flex said main conduit receiving portion to expand said opening and position said main conduit within said main conduit receiving portion upon the application of force between said main conduit and said conduit engaging sliding wedge surfaces of said main conduit receiving portion;

(c) a plate and earth anchor portion extending generally perpendicularly from said arm portion in proximity to said conduit receiving portion whereby said force may be applied between said conduit engaging sliding wedge surfaces and said main conduit to flex said main conduit receiving portion and expand said opening to position said main conduit in said main conduit receiving portion and to resist rotation of said wire separator apparatus about said main conduit after back-filling;

d) a tracer wire clip portion for receiving a tracer wire therein, said tracer wire clip portion being positioned on said arm portion adjacent to said other end to position the tracer wire said safe distance from said main conduit receiving portion and said conduit therein to protect said conduit from being damaged.”

are not taught, suggested or disclosed in the Shinohara et al reference, and the rejection of Claim 24 under 102(b) is totally unsupported by the reference, and should be withdrawn.

Claim 2 is dependent upon Claim 24. Thus, Claim 2 includes all of the language of Claim 24 and is submitted to be allowable for the same reasons as reiterated hereinabove with regard to Claim 24. Claim 2 further requires:

“the insulating wire separator apparatus is made of a resilient, nonconductive, noncorrosive, nonbiodegradable material.”

The Shinohara et al reference does not disclose the material from which the Shinohara et al retainer is made. Thus, there is nothing in the Shinohara et al reference that would teach, suggest or disclose or even require “a noncorrosive, nonbiodegradable material.”

Claim 6 is dependent upon Claim 24. Thus, Claim 6 includes all of the language of Claim 24 and is submitted to be allowable for the same reasons as reiterated hereinabove with regard to Claim 24. Claim 6 further requires:

“the tracer wire clip portion is located at said other end of said arm portion.”

The Shinohara et al reference does not teach, suggest or disclose a “main conduit receiving portion” at one end of the arm and a “tracer wire clip portion * * * adjacent to said other end” of said arm.

Claim 26 is dependent upon Claim 24. Claim 26 thus includes all of the language of Claim 24 and is submitted to be allowable for the same reasons as reiterated hereinabove with regard to Claim 24. Claim 26 further requires:

“said tracer wire clip portion has a pair of fingers for receiving a tracer wire therebetween.”

Claim 27 is dependent upon Claim 24. Claim 27 thus includes all of the language of Claim 24 and is submitted to be allowable for the same reasons as reiterated hereinabove with regard to Claim 24. Claim 27 further requires:

“A separator post extending generally perpendicularly from said arm portion in proximity to said tracer wire clip portion.”

Reconsideration of Claims 3, 5, 7, 8, 11, 19, and 20, rejected under 35 U.S.C. §103(a) as being unpatentable over Shinohara et al is also respectfully requested.

To make a *prima facie* case for obviousness under 35 U.S.C. § 103, the Examiner must show: (1) some suggestion or motivation in the prior art reference(s) or in the knowledge

generally available to one of ordinary skill in the art to modify the reference or to combine reference teachings to meet the claimed invention; (2) a reasonable expectation of success for the modification or combination of the prior art references; and (3) the prior art references teach or suggest all of the claim limitations of the claimed invention. MPEP § 2143.

As mentioned above, the Shinohara et al reference does not teach or suggest or disclose:

(a) “an elongated body having opposite ends, a resilient main conduit receiving portion at one of said opposite ends having an inner radius sized to receive said main conduit therein, an opening into said main conduit receiving portion facing away from the remainder of said body and sized to flex about said main conduit, and a pair of conduit engaging sliding wedge surfaces on opposite sides of said opening which engage said main conduit to flex said main conduit receiving portion to expand said opening and position said main conduit within said main conduit receiving portion upon the application of force between said main conduit and said conduit engaging sliding wedge surfaces of said main conduit receiving portion;

(c) a plate and earth anchor portion extending generally perpendicularly from said arm portion in proximity to said conduit receiving portion whereby said force may be applied between said conduit engaging sliding wedge surfaces and said main conduit to flex said main conduit receiving portion and expand said opening to position said main conduit in said main conduit receiving portion and to resist rotation of said wire separator apparatus about said main conduit after back-filling;

d) a tracer wire clip portion for receiving a tracer wire therein, said tracer wire clip portion being positioned on said arm portion adjacent to said other end to position the tracer wire said safe distance from said main conduit receiving portion and said conduit therein to protect said conduit from being damaged.”

See pages 17-25. These elements of Applicant’s insulating wire separator apparatus are not rendered obvious by the Shinohara et al reference.

Claims 3, 5, 7, 8, 11, 19, and 20 are each directly dependent on Claim 24. Thus, each of these claims include all of the language of Claim 24 and are allowable for the same reasons as reiterated hereinabove with regard to Claim 24. Claim 3 further requires:

“a separator post extends at right angles from said arm portion, said separator post spaced at least ten inches from said plate portion; and said arm portion extends at least two inches beyond said separator post, to provide safe spacing for additional underground utilities in a common trench location.”

The spacing of the separator post from the plate portion and the length of the arm portion are both chosen by Applicant in view of the electrical conductivity of moist soil and the environment in which Applicant's insulating wire separator is buried.

The Shinohara et al reference does not teach a separator post. Applicant's “separator post extends at right angles from the arm portion” between opposite ends of said body. Applicant's “separator post [is] * * * at least ten inches from said plate portion” and at least two inches from an end of the arm portion. No such structure is shown in Shinohara et al. The Examiner refers to an anchor portion 30 which is located at the distal end of the Shinohara et al retainer. The Shinohara et al anchor portion bears no resemblance to Applicant's separator post. The limitation “at least ten inches from said plate portion;” and said arm portion extends at least two inches beyond said separator post” positions Applicant's separator post between the opposite ends of Applicant's arm. Applicant's separator post bears no resemblance whatsoever to the Shinohara et al anchor portion 30 in structure or location as argued by the Examiner. Additionally, the entire concept of separating water utilities, gas utilities, electrical utilities, or the like by a separator post is non-existent in Shinohara et al. Shinohara et al only teaches two

spaced apart clamps defining a retaining space 44, neither of which bears any resemblance to any separator post.

Claim 5 is dependent upon Claim 24. Thus Claim 5 includes all of the language of Claim 24. Claim 5 is believed allowable for the same reasons as reiterated hereinabove with regard to Claim 24. Claim 20 is dependent upon Claim 26. Thus Claim 20 includes all of the language of Claims 24 and 26. Claim 20 is submitted to be allowable for the same reasons as reiterated herein with regard to Claims 24 and 26. Both Claims 5 and Claim 20 further require:

“said body is color coded, with a separate color used for each.”

The Examiner readily admits that the Shinohara reference does not disclose any wire support being color coded. The Examiner however believes that the color coating of Applicant's separator apparatus would have been obvious to anyone of ordinary skill in the art because one would have been motivated to provide a device that is aesthetically pleasing in appearance. The aesthetic appearance of Applicant's wire separator apparatus is not a feature of Applicant's wire separator apparatus and at a construction site would be the subject of humorous jokes. Applicant's wire separator apparatus is utilized at construction sites to separate tracer wires from utility conduits. Applicant's wire separator apparatus is only “color coded” to distinguish, to those having an interest, between electrical conduits, water conduits, gas conduits or other utility conduits. There is no teaching in any of the references cited or applied by the Examiner of color coating any wire support to distinguish such utility conduits, nor is it obvious to do so.

Claim 7 is dependent upon Claim 24. Thus Claim 7 includes all of the language of Claim 24. Claim 7 is submitted to be allowable for the same reasons as reiterated herein above with regard to Claim 24. Claim 7 further requires:

“the opening in the resilient, main conduit receiving portion is from sixty to eighty degrees from the centerline of the main conduit.”

Again the Examiner acknowledges that the Shinohara reference does not disclose, teach or suggest the opening of Applicant's main conduit being from sixty to eighty degrees from the centerline of the main conduit. Instead, the Examiner rejects the claim as being obvious to one skilled in the art at the time the invention was made as it has been held that where the general conditions of the claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art.

However, Applicant's insulating wire separator apparatus includes “a main conduit receiving portion sized to receive said main conduit therein”, “an opening”, “a pair of conduit engaging sliding wedge surfaces on the opposite sides of said opening which engage said main conduit deflects the main conduit receiving portion to expand said opening and position said main conduit within said main conduit receiving portion upon the application of force between the main conduit and said conduit engaging sliding wedge surfaces of said main conduit receiving portion.” Thus, the size of the opening, the amount of force applied between the opening and the conduit, the frictional sliding wedge surfaces on opposite sides of the conduit each must be adjusted to find the optimum to allow the conduit to be positioned in Applicant's conduit receiving portion. While it arguably may be obvious to one of ordinary skill in the art to

adjust a single parameter to discover the optimum or workable range within the routine skill in the art, here, there are so many interacting variables that invention by the “Edisonion” approach occurred and an obvious rejection is not supported by the record.

The size of the opening, the friction between the conduit and the sliding surfaces, the size of the main conduit receiving portion, amount of force a 150 pound installer versus a 250 pound installer can place between the sliding surfaces and the conduit, the materials from which Applicant’s wire separator apparatus is made, and the conditions of the earth surrounding the trench in which Applicant’s separator apparatus is being installed all impact on the optimization of Applicant’s opening. Installing Applicant’s wire separator apparatus in moist clay is far different from installing Applicant’s separator apparatus in dry sand or in other conditions. Applicant’s choice from 60 degrees to about 80 degrees from the center line of the main conduit clearly amounts to an invention.

Similarly, with regard to Claims 8 and 19 Applicant’s angling of Applicant’s tracer wire clip finger portion” amounts to invention. Claim 8 is dependent upon Claim 24. Thus, Claim 8 includes all of the language of Claim 24. Claim 8 is submitted to be allowable for the same reasons as reiterated hereinabove with regard to Claim 24. Claim 19 is dependent upon Claim 26. Thus Claim 19 includes all of the language of Claim 24 and 26. Claim 19 is submitted to be allowable for the same reasons as reiterated herein with regard to Claims 24 and 26. Claims 8 and 19 each further require:

“the tracer wire clip finger portion is angled from three to thirty degrees from the centerline of said arm portion to engage varying sizes of tracer wire therein.”

The angling of the finger portions include the same multiple variables above mentioned with regard to Applicant's conduit receiving portion (see pages 30-32) plus the additional factor that the tracer wires are utilized in varying sizes. Thus, the determination of the angle of the finger portion accomplished by Applicant results in invention and is not the result of routine skill in the art.

Multiple references raise different issues. The mere fact that references *can be* combined does not render the resulting combination obvious unless the prior art also suggests the desirability of the combination MPEP § 2143.01. Citing references which merely indicate that isolated elements and/or features recited in the claims are individually known in the art or that the elements would have been well within the ordinary skill of the art at the time the invention was made is not a sufficient basis for concluding that the combination of claimed elements would have been obvious, absent objective evidence of a motivating force which would compel persons skilled in the art to do what Applicant has done. *See Ex parte Levengood*, 28 U.S.P.Q. 2d 1300 (Bd. Pat. App. & Inter. 1993); *Ex parte Hiyamizu*, 10 U.S.P.Q. 2d 1393 (Bd. App. & Inter. 1988). A combination is improper where an Examiner's proposed modification would render the prior art version unsatisfactory for its intended purposes. *See Ex parte Rosenfield*, 130 U.S.P.Q. 113 (Bd. Pat. App. 1961).

An obviousness rejection is valid only if (i) it would have been obvious to a person of ordinary skill in the art to modify the structure that the primary reference discloses to that structure which is claimed, as a matter of standard design technique if the reference stands alone

or as a result of a combination of one or more secondary references if the primary reference teachings are missing from the primary reference; (ii) any modification or combination is motivated or suggested by the primary reference; (iii) each and every limitation is taught by the modified or combined prior art; and (iv) such modifications or combinations do not require an inventive step.

Reconsideration of Claim 9, rejected under 35 U.S.C. §103 as being unpatentable over Shinohara et al in view of Adams is respectfully requested. Claim 9 is dependent on Claim 24. Thus, Claim 9 includes all of the language of Claim 24 and is respectfully submitted to be allowable for the same reasons as reiterated hereinabove with regard to Claim 24. Claim 9 further requires:

“the main conduit receiving portion comprises an inner radius having a first half portion with a second half portion releasably secured to said first half portion by a releasable fastener.”

The Examiner admits that the Shinohara et al reference does not teach or suggest Applicant's main conduit receiving portion having an inner radius with a first half portion and a second half portion releasably secured to the first half portion by a releasable fastener. There is in fact in the Shinohara et al reference no disclosure of an inner radius with a first half portion and a second half portion releasably secured together. The Adams mounting clip has no conduit receiving portion at all and thus does not add anything to the Shinohara et al reference. Adams relates to a light holder for Christmas tree lights which are relatively light weight, not to a holder for a metal or plastic utility conduit in a construction setting. The Adams barbs 142 and the Adams toggles 137 are not in any way like Applicant's flange portions 211-216 and Applicant's

threaded fasteners 217 and 218. No person skilled in the art to which Applicant's invention pertains would look to Adams or be motivated by Adams to modify the Shinohara et al coil clamp or cable clamp or to be taught Applicant's wire separator apparatus.

The mere fact the Examiner thought he had to rely upon Adams to reject Claim 9 indicates that Claim 9 is indeed patentable over the Shinohara et al reference. Since Adams adds nothing to the Shinohara et al reference Claim 9 should be allowable for the reasons above given.

Reconsideration of Claims 12-15 and 25, rejected under 35 U.S.C. §103(a) as being unpatentable over Shinohara et al in view of the patent issued to Ziu, is respectfully requested. The mere fact that the Examiner rejects Claims 12-15 and 25 as being unpatentable over both the Shinohara et al and Ziu references indicates that the similar claims not dependent from Claim 25, i.e., Claims 5-8, 20, 26 and 28, are indeed patentable over the patent issued to Shinohara et al. The addition of the patent issued to Ziu does not add anything to the disclosure of Shinohara.

Claim 25 further requires an outwardly extending strengthening rib between the conduit engaging sliding surfaces and said arm. The patent issued to Ziu discloses a double containment height assembly. What the Examiner believes is a strengthening rib (called a "flange 40" in Ziu) is clearly not the strengthening rib Applicant is claiming. The support clip 16 has, like Applicant's main conduit receiving portion, sliding wedge surfaces. However, the strengthening rib of Ziu does not extend "between the conduit engaging sliding wedge surfaces and said arm portion" - in fact, it is spaced apart from "said conduit engaging sliding wedge surfaces." It would have been totally unclear to anyone skilled in the art how the strengthening rib 40 of Ziu

would apply to Applicant's insulating wire apparatus as claimed in Claim 25 or Claims 12-15 depending therefrom.

Claims 12-15 are each dependent upon Claim 25. Claim 25 itself is dependent upon Claim 24. Thus, Claims 12-15 each include all of the language of Claims 25 and 24. Applicant respectfully submits that Claims 12-15 are allowable for the same reasons as reiterated herein with regard to Claims 24 and 25. Claim 25 is dependent upon Claim 24 and thus includes all of the language of Claim 24. Claim 25 is respectfully submitted to be allowable for the same reasons reiterated hereinabove with regard to Claim 24. Claim 12 further requires:

“said body is color-coded with a separate color used for each utility.”

Claim 13 further requires:

“the tracer wire clip portion is located at said other of said opposite ends.”

Claim 14 further requires:

“the opening provided in the resilient, main conduit receiving portion is from sixty to eighty degrees from the centerline of the main conduit.

Claim 15 further requires:

“the tracer wire clip finger portion is angled from three to thirty degrees from the centerline of said arm portion to engage varying sizes of tracer wire therein.”

Claim 25 further requires:

“said main conduit receiving portion has an outwardly extending strengthening rib which extends between said conduit engaging sliding wedge surfaces and said arm portion.”

The patent issued to Ziu adds nothing to this discussion.

Reconsideration of Claim 16, rejected under 35 U.S.C. §103 as being unpatentable over Shinohara et al in view of Ziu and further in view of Adams, is respectfully requested. Claim 16 is dependent upon Claim 25. Thus, Claim 16 includes all of the language of Claims 24 and 25.

Claim 16 further requires:

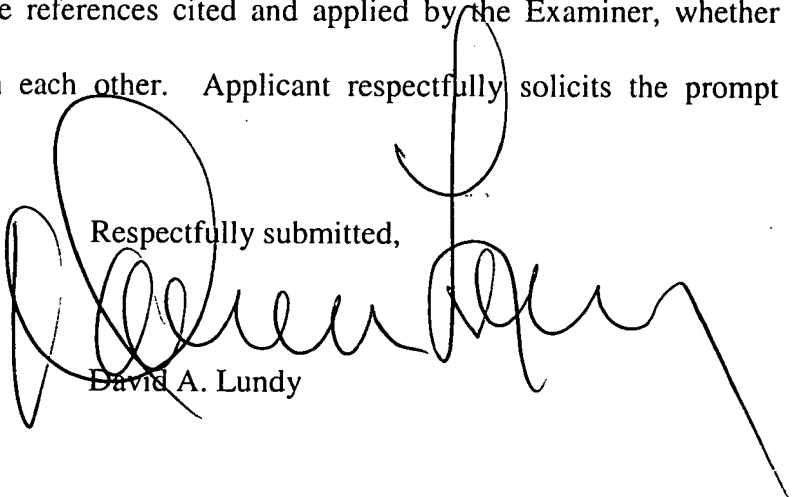
“the main conduit receiving portion comprises an inner radius having a first half radiused portion, with a second half radiused portion releasably secured to said first half radiused portion by a releasable fastener.”

Claim 16 is submitted to be allowable for the same reasons as reiterated hereinabove with regard to Claims 24, 25 and Claim 9.

For all of the reasons above stated, Applicant respectfully submits that all of the claims presently in the application, as amended, patentably distinguish Applicant's insulating wire separator apparatus from each of the references cited and applied by the Examiner, whether taken alone or in combination with each other. Applicant respectfully solicits the prompt issuance of a Notice of Allowance.

Respectfully submitted,

David A. Lundy



APPENDIX

2. The insulating wire separator apparatus of Claim 24, wherein the insulating wire separator apparatus is made of a resilient, nonconductive, noncorrosive, nonbiodegradable material.
3. The insulating wire separator apparatus of Claim 24, wherein a separator post extends at right angles from said arm portion, said separator post spaced at least ten inches from said plate portion; and said arm portion extends at least two inches beyond said separator post, to provide safe spacing for additional underground utilities in a common trench location.
5. The insulating wire separator apparatus of Claim 24, wherein said body is color coded, with a separate color used for each utility.
6. The insulating wire separator apparatus of Claim 24, wherein the tracer wire clip portion is located at said other of said opposite ends.
7. The insulating wire separator apparatus of Claim 24, wherein the opening in the resilient, main conduit receiving portion is from sixty to eighty degrees from the centerline of the main conduit.
8. The insulating wire separator apparatus of Claim 24, wherein the tracer wire clip finger portion is angled from three to thirty degrees from the centerline of said arm portion to engage varying sizes of tracer wire therein.
9. The insulating wire separator apparatus of Claim 24, wherein the main conduit receiving portion comprises an inner radius having a first half portion, with a

second half portion releasably secured to said first half portion by a releasable fastener.

11. The insulating wire separator apparatus of Claim 27, wherein said arm portion extends at least two inches beyond said separator post to provide safe spacing for additional underground utilities in a common trench location.
12. The insulating wire separator apparatus of Claim 25, wherein said body is color-coded with a separate color used for each utility.
13. The insulating wire separator apparatus of Claim 25, wherein the tracer wire clip portion is located at said other of said opposite ends.
14. The insulating wire separator apparatus of Claim 25, wherein the opening provided in the resilient, main conduit receiving portion is from sixty to eighty degrees from the centerline of the main conduit.
15. The insulating wire separator apparatus of Claim 25, wherein the tracer wire clip finger portion is angled from three to thirty degrees from the centerline of said arm portion to engage varying sizes of tracer wire therein.
16. The insulating wire separator apparatus of Claim 25, wherein the main conduit receiving portion comprises an inner radius having a first half radiused portion, with a second half radiused portion releasably secured to said first half radiused portion by a releasable fastener.

19. The insulating wire separator apparatus of Claim 26, wherein the tracer wire clip finger portion is angled from three to thirty degrees from the centerline of said arm portion to engage varying sizes of tracer wire therein.
20. The insulating wire separator apparatus of Claim 26, wherein said body is color-coded, with a separate color used for each utility.
24. An insulating wire separator apparatus for separating a tracer wire a safe electrically insulative distance from a main conduit in a trench prior to back-filling comprising:
 - a) an elongated body having opposite ends, a resilient, main conduit receiving portion at one of said opposite ends having an inner radius sized to receive said main conduit therein, an opening into said main conduit receiving portion facing away from the remainder of said body and sized to flex about said main conduit, and a pair of conduit engaging sliding wedge surfaces on opposite sides of said opening which engage said main conduit to flex said main conduit receiving portion to expand said opening and position said main conduit within said main conduit receiving portion upon the application of force between said main conduit and said conduit engaging sliding wedge surfaces of said main conduit receiving portion;
 - b) an arm portion of said body extending away from said main conduit receiving portion on a side opposite said opening, said arm portion extending to

the other of said opposite ends, an electrically insulative safe distance beyond said main conduit receiving portion;

c) a plate and earth anchor portion extending generally perpendicularly from said arm portion in proximity to said conduit receiving portion whereby said force may be applied between said conduit engaging sliding wedge surfaces and said main conduit to flex said main conduit receiving portion and expand said opening to position said main conduit in said main conduit receiving portion and to resist rotation of said wire separator apparatus about said main conduit after back-filling; and

d) a tracer wire clip portion for receiving a tracer wire therein, said tracer wire clip portion being positioned on said arm portion adjacent to said other end to position the tracer wire said safe distance from said main conduit receiving portion and said conduit therein to protect said conduit from being damaged.

25. The insulating wire apparatus of Claim 24 wherein said main conduit receiving portion has an outwardly extending strengthening rib which extends between said conduit engaging sliding wedge surfaces and said arm portion.
26. The insulating wire apparatus of Claim 24 wherein said tracer wire clip portion has a pair of fingers for receiving a tracer wire therebetween.

27. The insulating wire apparatus of Claim 24 further comprising a separator post extending generally perpendicularly from said arm portion in proximity to said tracer wire clip portion.

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